

What is claimed is:

1. A radiation detector comprising:

a plurality of scintillators closely arranged two-dimensionally,

5 a plurality of photoelectron multipliers optically connected to the scintillators, a number of photoelectron multipliers being less than that of the scintillators, and

10 a light guide disposed between the scintillators and the photoelectron multipliers and formed of a cured liquid resin and a lattice frame member integrally formed with the liquid resin when cured, said lattice frame member forming partition walls in the cured liquid resin to provide compartments therein.

15 2. A radiation detector as claimed in claim 1, wherein said lattice frame member is formed of at least one material selected from the group consisting of a light reflex material, light blocking material, light transmitting material, and half-mirror.

20 3. A radiation detector as claimed in claim 1, wherein said lattice frame member is formed of sheet members assembled together to form the partition walls.

25 4. A radiation detector as claimed in claim 3, wherein each of the sheet members has a first portion where light transmits and a second portion where light does not transmit.

5. A radiation detector as claimed in claim 4, wherein said second portion is formed of a transparent sheet member attached to a layer for blocking light.

6. A method of producing a radiation detector, comprising:
preparing a lattice frame member formed of sheet members,
disposing the lattice frame member in a liquid resin,
hardening the liquid resin with the lattice frame member
therein to obtain a light guide, and
assembling the liquid guide between a scintillator unit
formed of a plurality of scintillators and a photoelectron
multiplier unit formed of a plurality of photoelectron
multipliers.

10 7. A method of producing a radiation detector as claimed in
claim 6, wherein in forming the liquid guide, the lattice frame
member is disposed in a bath, the liquid resin is pored into the
bath, and then, the liquid resin is cured for hardening.

15 8. A method of producing a radiation detector as claimed in
claim 6, wherein said sheet member is formed of at least one
material selected from the group consisting of a light reflex
material, light blocking material, light transmitting material,
20 and half-mirror.

25 9. A method of producing a radiation detector as claimed in
claim 6, wherein each of said sheet members has a first portion
where light transmits and a second portion where light does not
transmit.

10. A method of producing a radiation detector as claimed in
claim 9, wherein said second portion is formed of a transparent
sheet member attached to a layer for blocking light.